RESEARCH PROBLEM STATEMENT #DC-512

I – Problem Title
Establishing long-term, sustainable vegetation in conifer and high desert areas. (LAP-07)

II – Research Problem Statement
Caltrans is unable to establish the dominant, perennial, under story species (sagebrush, rabbit brush and antelope brush), found in conifer high-desert areas / Mediterranean mountain zones, within the standard Erosion Control Type D treatment. Information is needed regarding the ecological germination and establishment requirements for these species that can be incorporated into our erosion control/revegetation specifications.

III – Objective
An understanding of how to successfully establish this suite of perennial shrub species within our existing erosion control treatments will improve Caltrans ability to provide long-term, self sustaining vegetation, rather than purely relying on grasses in these (non-grassland) areas. This research work would encompass revegetation difficulties currently found in portions of Districts 1, 2, 3, 8, 9 and 10. This work will contribute to improving our performance goals by providing Caltrans the means to improve revegetation and stabilize work areas, especially slopes and thereby the ability to meet project goals and regulatory requirements.

IV – Background
This suite of species are the dominate under story plants found in high elevation and high desert areas and they appear to be rapid colonizers on disturbed sites. Seed is commercially available, but current practices have not produced establishment results. Little is known about their seed viability or germination requirements.

V – Statement of Urgency and Benefits
Information that improves Caltrans erosion control success can be immediately incorporated into contract specifications leading to better results. Thus positively affecting the regulatory process and public perceptions. Having the ability to establish long-term, self sustaining vegetation will decrease current problems that require Caltrans Project Development or Maintenance staff to return to past project sites to correct problems or deficiencies in erosion control or revegetation success.

VI – Related Research
There are other contracts currently underway investigating methods for improving erosion control/revegetation success, but none of these are focusing on this suite of species in these higher elevation and high desert areas. There are published studies of germination and establishment of related species. This information will be used to generate the tests or trials for using these species on our standard EC treatments.

VII – Deployment Potential
Product will be new contract specification (or recommendations for) for establishing the suite of species within our standard Erosion Control Type D.